

WHAT IS CLAIMED IS:

1. An apparatus for reproducing information signals recorded in a plurality of recording modes having different information sizes of an information signal to be recorded per unit time, comprising:
- 5 reproduction means for reproducing information signals recorded in the plurality of modes from a recording medium;
- mode discrimination means for discriminating a recording mode of the information signal reproduced by
- 10 said reproduction means;
- tracking means for controlling tracking between the recording medium and said reproduction means; and
- control means for controlling tracking by said
- 15 tracking means in accordance with a discrimination result of said mode discrimination means.
2. An apparatus according to claim 1, further comprising:
- 20 expansion means for expanding the information size of the reproduced information signal in accordance with the discrimination result of said mode discrimination means.
- 25 3. An apparatus according to claim 1, wherein said reproduction means comprises first and second heads for tracing a large number of tracks formed on

09901700-071101

the recording medium, and reproduces the information signals recorded in the plurality of recording modes using both said first and second heads.

5 4. An apparatus according to claim 3, wherein the plurality of recording modes have first and second recording modes, and said first and second heads are for the first recording mode.

10 5. An apparatus according to claim 1, wherein said tracking control means comprises tracking error signal generation means for generating a tracking error signal using the reproduced information signal, and convey means for conveying the recording medium in
15 accordance with the tracking error signal, and said control means controls a generation timing of the tracking error signal in accordance with the discrimination result of said mode discrimination means.

20 6. An apparatus according to claim 5, wherein said reproduction means comprises a rotary head for tracing the recording medium, and said control means controls the generation timing of the tracking error
25 signal in synchronism with a rotation period of said rotary head.

09901760.071101

7. An apparatus according to claim 1, wherein
said mode discrimination means discriminates the
recording mode in accordance with mode identification
information reproduced from the recording medium by
5 said reproduction means.

8. An apparatus for reproducing information
signals recorded in a plurality of recording modes
which compress information sizes of information signals
10 to be recorded at different compression ratios,
comprising:

reproduction means for reproducing information
signals recorded in the plurality of modes from a
recording medium;

15 mode discrimination means for discriminating a
recording mode of the information signal reproduced by
said reproduction means;

tracking means for controlling tracking between
the recording medium and said reproduction means; and

20 control means for controlling tracking by said
tracking means in accordance with a discrimination
result of said mode discrimination means.

9. An apparatus according to claim 8, further
25 comprising:

expansion means for expanding the information size
of the reproduced information signal in accordance with

09901700-071101

the discrimination result of said mode discrimination means.

10. An apparatus according to claim 8, wherein
5 said reproduction means comprises first and second heads for tracing a large number of tracks formed on the recording medium, and reproduces the information signals recorded in the plurality of recording modes using both said first and second heads.

10 11. An apparatus according to claim 10, wherein the plurality of recording modes have first and second recording modes, and said first and second heads are for the first recording mode.

15 12. An apparatus according to claim 8, wherein said tracking control means comprises tracking error signal generation means for generating a tracking error signal using the reproduced information signal, and
20 convey means for conveying the recording medium in accordance with the tracking error signal, and said control means controls a generation timing of the tracking error signal in accordance with the discrimination result of said mode discrimination
25 means.

13. An apparatus according to claim 12, wherein

said reproduction means comprises a rotary head for tracing the recording medium, and said control means controls the generation timing of the tracking error signal in synchronism with a rotation period of said rotary head.

14. An apparatus according to claim 8, wherein said mode discrimination means discriminates the recording mode in accordance with mode identification information reproduced from the recording medium by said reproduction means.

15. An apparatus for reproducing image signals from a recording medium on which a large number of tracks are formed, and image signals are recorded in a first recording mode which records an image signal for one frame on n tracks, and a second recording mode which records an image signal for one frame on m ($m > n$) tracks, comprising:

reproduction means for reproducing the image signals by tracing the recording medium using a plurality of heads;

mode discrimination means for discriminating a recording mode of the image signal reproduced by said reproduction means;

tracking means for controlling tracking between the recording medium and said reproduction means; and

control means for controlling tracking by said tracking means in accordance with a discrimination result of said mode discrimination means.

5 16. An apparatus according to claim 15, wherein said plurality of heads include first and second heads, and said reproduction means reproduces the information signals recorded in the first and second recording modes using both said first and second heads.

10

 17. An apparatus according to claim 16, wherein said first and second heads are for the first recording mode.

15

 18. An apparatus according to claim 15, wherein said tracking control means comprises tracking error signal generation means for generating a tracking error signal using the reproduced information signal, and convey means for conveying the recording medium in accordance with the tracking error signal, and said control means controls a generation timing of the tracking error signal in accordance with the discrimination result of said mode discrimination means.

20

25

 19. An apparatus according to claim 18, wherein said control means controls the generation timing of

09901700-07101

the tracking error signal in synchronism with a switching pulse for switching reproduction timings of said plurality of heads.

5 20. An apparatus according to claim 15, wherein said mode discrimination means discriminates the recording mode in accordance with mode identification information reproduced from the recording medium by said reproduction means.

10

21. An apparatus according to claim 15, wherein said tracking means controls a relative position between a predetermined one of said plurality of heads and a predetermined target track of the large number of tracks.

15

22. An apparatus according to claim 21, wherein said tracking means comprises extraction means for extracting a plurality of pilot signals from image signals reproduced from two neighboring tracks of the target track, generation means for generating a tracking error signal on the basis of the plurality of pilot signal components, and convey means for conveying the recording medium on the basis of the tracking error signal, and said control means changes balance between levels of the plurality of pilot signals on the basis of the discrimination result of said mode

20

25

00001700:071101

discrimination means.

23. An apparatus for reproducing image signals
from a tape-like recording medium on which image
5 signals are recorded in a first recording mode which
compresses an information size of an image signal at a
first compression ratio and records an image signal for
one frame on n tracks, and a second recording mode
which compresses an information size of an image signal
10 at a second compression ratio different from the first
compression ratio and records an image signal for one
frame on $2n$ tracks, comprising:

reproduction means for reproducing the image
signals by tracing the recording medium using first and
15 second heads having different azimuth angles;

discrimination means for discriminating a
recording mode of the image signal reproduced by said
reproduction means;

expansion means for expanding the information size
20 of the reproduced image signal on the basis of a
discrimination result of said discrimination means;

generation means for extracting a pilot signal
from the reproduced image signal, and generating a
tracking error signal on the basis of the pilot signal;

25 convey means for conveying the tape-like recording
medium on the basis of the tracking error signal; and
control means for controlling a generation timing

of the tracking error signal by said generation means in accordance with the discrimination result of said discrimination means.

5 24. A method of controlling an apparatus for reproducing information signals recorded in a plurality of recording modes having different information sizes of an information signal to be recorded per unit time, comprising:

10 a reproduction step of reproducing information signals recorded in the plurality of modes from a recording medium using reproduction means;

 a mode discrimination step of discriminating a recording mode of the information signal reproduced in
15 the reproduction step;

 a tracking step of controlling tracking between the recording medium and the reproduction means; and

 a control step of controlling tracking in the tracking step in accordance with a discrimination
20 result in the mode discrimination step.

 25. A method of controlling an apparatus for reproducing information signals recorded in a plurality of recording modes which compress information sizes of
25 information signals to be recorded at different compression ratios, comprising:

 a reproduction step of reproducing information

09501700-071101

signals recorded in the plurality of modes from a recording medium using reproduction means;

a mode discrimination step of discriminating a recording mode of the information signal reproduced in the reproduction step;

a tracking step of controlling tracking between the recording medium and the reproduction means; and

a control step of controlling tracking in the tracking step in accordance with a discrimination result in the mode discrimination step.

26. A method of controlling an apparatus for reproducing image signals from a recording medium on which a large number of tracks are formed, and image signals are recorded in a first recording mode which records an image signal for one frame on n tracks, and a second recording mode which records an image signal for one frame on m ($m > n$) tracks, comprising:

a reproduction step of reproducing the image signals by tracing the recording medium using a plurality of heads;

a mode discrimination step of discriminating a recording mode of the image signal reproduced in the reproduction step;

a tracking step of controlling tracking between the recording medium and said plurality of heads; and
a control step of controlling tracking in the

09901700-071101

tracking step in accordance with a discrimination
result in the mode discrimination step.

090100-07104
101120-00210660